

## USING MULTIPLE DETECTION ALGORITHMS IN POSITIONING SIGNAL PROCESSING

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### ABSTRACT OF THE DISCLOSURE

5 A systematic method for acquiring positioning signals, such as global  
positioning system (GPS) signals, uses different signal detection algorithms at  
10 different stages of signal detection. For example, a method for detecting multiple  
positioning signals may include first detecting a first positioning signal using a  
robust but less sensitive signal detection method, such as non-coherent integration.  
Based on the signal parameter values that allow detection of the first positional  
signal, detecting a second positioning signal using a more sensitive method, such as  
15 coherent integration. In this manner, by capturing the strongest signal first using a  
robust method, signal detection parameter values common to positioning signals can  
be narrowed to allow subsequent signal acquisitions using a more sensitive -- but  
computationally more intensive -- method.